

Claims: I claim:

1. An earthquake resistant multi-story building utilizing gravity potential energy to absorb earthquake energy, comprising:

- (a) a plurality of tension-only braces,
- (b) a plurality of beams with substantial gravity load,
- (c) a plurality of columns, and
- (d) means for jointing the low end of a pair of said braces arranged in a v-shape to the center of one of said beam, and the two upper ends to said columns at each end of said beam, respectively, and repeating the jointing process at predetermined locations,
- (e) whereby when said columns move laterally under earthquake motion, said braces will lift said beams upward, and induce gravity potential energy to counter-balance earthquake energy, and afterwards said beams will move downward to their original positions under gravity load, in turn said columns will return to the vertical position due to constraint of said tension-only braces, and thus creating a stable, fail-safe and economical building for resisting earthquake motion.

- 2. The claim 1 wherein said tension-only brace may be made of steel rod, steel cable, steel wire and any commercially available materials with proper stiffness and strength.
- 3. The claim 1 wherein said building may be constructed of steel or of reinforced concrete.
- 4. The claim 1 wherein the joint location from said brace to said beam may be at any point within the span of said beam, preferably at concentrated load to be most efficient.
- 5. A method of utilizing gravity potential energy to absorb earthquake energy for a

multi-story building with columns and beams, comprising the steps of :

- (a). installing a pair of v-shaped tension-only braces with lower end at center of said beam and upper ends to said columns at the two ends of said beam,
- (b). repeating the jointing process at all predetermined locations of said building,
- (c). whereby when said columns move laterally under earthquake motion, said braces will lift said beams upward, and induce gravity potential energy to counter-balance earthquake energy, and afterwards said building will return to its original position just as the action in a roly-poly man toy, and thus creating a stable, fail-safe and economical building for resisting earthquake motion.

(6) A wind resistant multi-story building utilizing gravity load to resist wind load, compressing:

- (a) a plurality of v-shaped tension-only braces,
- (b) a plurality of beams with substantial gravity load,
- (c) a plurality of columns, and
- (d) means for jointing said braces to said beams and columns at predetermined locations,
- (e) whereby when said columns move laterally under wind load, said braces will lift said beams upward, and induce gravity load to counter-balance wind load, and afterwards said building will return to its original position just as the action in a roly-poly man toy, and thus creating a stable, and economical building for resisting wind load.